# Address Data Guideline

## Information Management Framework

VICTORIA State Government | Premier and Cabinet

# Document control

## Approval

This document was approved by the Information Management Group on 26/07/2017, and applies from the date of issue (see below).

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| **APPLIES TO** | All Departments and Victoria Police | **AUTHORITY** | Information Management Group |
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## Version history

| Version | Date | Comments |
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| **0.1** | 30/06/2017 | First draft |
| **0.9** | 18/07/2017 | Minor changes following feedback |
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# Contents

# Introduction

## Overview

This document provides guidance to Victorian Government (the government) departments for implementing the *IM-STD-04 Address Data Standard* (the standard). This document is a guide only.

## Rationale

Consistent and accurate address data is critical to the planning, delivery and management of government services, public infrastructure and assets including:

- emergency dispatch and disaster response
- healthcare and human services
- education
- law enforcement
- electoral services
- utility and communications services
- natural resource management
- transport asset management and infrastructure planning
- land use planning and development.

To provide effective and joined-up services, government needs to share address data that is accurate and in a consistent format to enable seamless sharing. Conforming to a common interchange format simplifies the task of interfacing between systems, reducing costs and increasing re-usability.

When releasing public data containing address components, adherence with industry standards simplifies re-use and enables linking and aggregation with other data.

## Derivation, audience, glossary & related documents

### Derivation

This guideline is derived from the *Data Management Position Paper*.

### Audience

This guideline has been developed for Victorian Government departments and Victoria Police which are in scope for implementation of the standard, however the content may be of relevance to other agencies.

This guideline is specifically targeted at officers involved in governing and managing data assets, and managing data systems and associated business processes. This includes:

- Chief Information Officers (CIOs)
- senior line-of-business representatives with significant data assets under their management
- data owners
- data custodians
- enterprise, solution and data architects
- data governance and data quality managers
- data analysts
- application, database and system administrators.

## Glossary

The glossary of terms and abbreviations used in this document are defined in the *IM GUIDE 03 Information Management Glossary*.

## Related documents, tools and references

- *IM-FMW-01 Information Management Framework*
- *IM-STD-04 Address Data Standard*
- *GovShare AS4590 Technical Implementation Guidelines*
- *DHHS Address reference data dictionary*

# Guidelines

## When to apply

### New systems and datasets

The requirements of the standard should be fully met when implementing a new system (e.g. an application or electronic form) or dataset (e.g. a collection for reuse, sharing or release).

Where the new system is a commercial product, the requirement to comply with the standard should be stipulated during the procurement processes.

If the product selected does not comply with the standard, additional costs may be incurred when trying to integrate with other systems or share address data across government. If addresses are not validated on entry, the resultant poor data quality can impact on business processes and service delivery.

The government has taken a position that development of custom systems is a last resort[1]. Should this approach be taken, the system should be fully compliant with the standard.

When the implementation of a new system or dataset involves the migration of historical address data, appropriate data quality activities such as profiling and cleansing should be undertaken (see Batch validation below).

### Existing systems and datasets

The application of the standard to existing systems and datasets is highly desirable, however this may not always be possible or feasible. For example, some legacy systems may be difficult to modify, or may be approaching end-of-life and due for replacement.

Departments should consider a range of factors when deciding whether to implement aspects of the standard in existing systems and datasets, including alignment with enterprise architecture and enterprise data management initiatives, business drivers, and return on investment.

Where it is determined changes will not be made, periodic profiling, analysis and cleansing (e.g. batch validation) of address data should be considered, along with other data quality improvement measures such as changes to business processes. These activities will both benefit the business in the present, and assist with future data migration and compliance with the standard.

[1] Information Technology Strategy 2016-20 for the Victorian Government, Victorian Government, 2016, http://www.enterprisesolutions.vic.gov.au/it-strategy/

# Types of address

This standard prescribes the approved authoritative sources for both physical or street addresses (e.g. place of residence, business, asset or incident) and postal addresses (i.e. mailing or correspondence). Street and postal address can differ.

Departments may benefit from capturing both types of address depending on the information requirements of the primary business process or transaction, and foreseeable secondary uses of the data such as reporting, analytics or insight. For example, accurate geospatial analysis or modelling of the location of clients, services or incidents requires physical address to have been recorded, rather than only postal address.

# Authoritative sources

An authoritative source is an entity recognised by a legal authority (or similar) to develop or manage data for a specific business purpose or domain.

Reference data are sets of valid, permissible values to be used in a given field or domain. 'Address reference data' refers to sets of addresses that are complete, valid and fit for purpose.

## Physical / street addresses

1. For physical or street addresses (e.g. place of residence, business, asset or incident) use:
   a. Geocoded National Address File[2] (G-NAF), or
   b. Vicmap Address[3].

### Geocoded National Address File (G-NAF)

The G-NAF is a trusted index of Australian address information. It contains the state, suburb, street, number and coordinates for street addresses in Australia.

G-NAF uses existing and recognised address sources (referred to as contributors) from the state and territory government land records and commonwealth government agencies. This includes Victoria's Vicmap Address dataset (see below). G-NAF is maintained by PSMA Australia (PSMA), an unlisted public company owned by Australia's federal, state and territory governments.[4]

G-NAF is updated quarterly and published on data.gov.au. G-NAF Live is a web service providing access to the most recent authoritative addresses supplied to PSMA (with update frequency ranging from daily to quarterly, depending on contributor), and is available via third party PSMA partners.

For further information, see *G-NAF® Data Product Description*, which includes a data model and data dictionary.

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[2] G-NAF, PSMA, 2017, https://www.psma.com.au/products/g-naf

[3] Vicmap™ Product data description, Victorian Government, 2017, http://www.depi.vic.gov.au/forestry-and-land-use/spatial-data-and-resources/vicmap
Note: Vicmap Address should be used when only Victorian addresses are required, and the update frequency and/or delivery mechanism of G-NAF is not suitable).

[4] G-NAF® Data Product Description, PSMA, 2017, https://www.psma.com.au/products/g-naf

## Vicmap Address

Vicmap Address is maintained by the Department of Environment, Land, Water and Planning (DELWP). It is the authoritative geocoded database of property address points for Victoria and is used by G-NAF as the source of Victorian addresses. Vicmap Address data includes predominately (but not exclusively) property address identifiers assigned by Local Government.[2]

Vicmap Address is updated weekly and is available directly through DELWP's Spatial Datamart, as well as third party Vicmap Data Service Providers. The weekly updates are provided to PSMA to form part of G-NAF and G-NAF Live, and Vicmap Address is also published quarterly on Data.Vic.

For further information, see *Vicmap™ Address Product data description* and the *Vicmap data model*.

# Postal addresses

2. For postal addresses (i.e. mailing or correspondence) use Postal Address File[5] (PAF).

Postal addresses are those addresses to which Australia Post will deliver mail. While many are physical locations, many are not, e.g. post office (PO) boxes, roadside delivery points (RSD's) and roadside mail boxes (RMB's). Conversely, physical or street addresses are not always valid postal addresses as Australia Post does not deliver mail to all physical addresses.

## Postal Address File (PAF)

The PAF is an extract from Australia Post's core addressing database. It was developed to support Australia Post's mail processing and delivery operations. It contains Australian postal addresses in a preferred postal address format and their corresponding DPIDs (Delivery Point Identifiers) or DID (Delivery Identifier).[6]

PAF is updated monthly and made available through Australia Post Raw address file solution providers.

For further information, visit *Australia Post Data Guide*.

[5] PAF, Australia Post, 2017, https://auspost.com.au/business-solutions/data-marketing-services/improve-your-data/address-data

[6] Australia Post Data Guide, Australia Post, 2015, https://auspost.com.au/business-solutions/data-marketing-services/supporting-our-data-partners/address-data

# Validation

3. Use the authoritative sources above to validate physical or street and postal addresses:
   a. at the point of collection, entry or receipt of data, and
   b. when performing data quality profiling, analysis and cleansing.

In practice, validation of addresses will often occur using a combination of physical and postal reference addresses depending on the information requirements of the business process. Most third party validation providers offer a combination of G-NAF and PAF by default.

Departments may choose to perform validation internally, obtaining address data files from the authoritative source(s) and running either application-specific validation or a shared validation service across the department. In this case, the address data files should be updated on a regular basis.

## Point of entry / real-time validation

Validating address accuracy at the point of entry, for instance when entering data into systems during web, phone or face-to-face contact, is the most effective way of ensuring data quality.

A number of third party providers offer web services for real-time address validation against up-to-date versions of G-NAF and / or PAF. Typically, these are provided as an Application Programming Interface (API), which can be integrated into transactional systems and web electronic forms.

## Batch validation

Where real-time validation is not feasible or for data quality initiatives such as profiling and cleansing of historical data, a batch address validation service may be used. In this process, a (usually large) set of address data is generally extracted and run through a tool (either on premise or externally) via Software as a Service (SaaS). Many Vicmap and PSMA third party providers offer this service.

Valid addresses captured in the past may no longer exist in the same form today, or in the future. There are also recordkeeping implications of changing historical data. Departments should be mindful of these types of considerations when planning batch validation of address data.

## Non-standard addresses

There are a range of scenarios where addresses may not conform to the standard Australian format, or match with an authoritative source. These include people of ‘no fixed abode’ (e.g. homeless), overseas visitors and people who refuse to provide a full (or even partial) address. The location of an event (e.g. an accident) may be in a location without a precise listed street address, or need to be more specific than the address of a large rural property. Additionally, new legitimate addresses may not yet have been included in the authoritative reference data at the time of interaction or transaction. Departments should determine the appropriate system functionality, business rules and validations to cater for these scenarios.

# Interchange, storage, sharing and release

4. Use Section 5 'address details' of Australian Standard AS 4590: Interchange of client information[7] (AS 4590) as the data standard for:
   a. interchange of address data between systems
   b. the basis of the schema[8] when sharing or releasing address data manually
   c. the basis of the schema and data model for storage of address data in any custom-developed systems.

## Australian Standard AS 4590: Interchange of client information

AS 4590 is the recognised standard for the interchange of client information within Australia. The standard was originally developed as a result of industry concern at the myriad of data interchange formats used within the information technology industry.

It is comprised of several sections including party identification, person, organisation, address and electronic contact details. Section 5 'address details' is aligned with AS/NZS 4819 *Geographic Information – Rural and urban addressing,* the standard that directs authorities such as Local Government on the allocation of physical addresses.

The schemas for Vicmap, G-NAF and PAF are all based on AS 4590, with some extensions for additional geocode information.

Where a UML or XML format is to be used for exchange of address data between systems, *AS 4590 Technical Implementation Guidelines and UML/XML schemas* are available from GovShare.

The Department of Health and Human Services' *Address reference data dictionary* provides an example of a health and human services based implementation guide for address, based on AS 4590.

# Further information

For further information regarding this guideline, please contact Enterprise Solutions, Department of Premier and Cabinet, at: enterprisesolutions@dpc.vic.gov.au

[7] Australian Standard AS 4590-2006: *Interchange of client information*, Standards Australia, 2006, https://infostore.saiglobal.com/store/details.aspx?ProductID=316376 (also available via the Victorian Government Library Service at http://library.intranet.vic.gov.au/)

[8] E.g. elements or columns in a spreadsheet or data file